

MAR 5 1996

GROUP 1800

SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT: Warmke, Jeffrey W.
Van Der Ploeg, Leonardus
- (ii) TITLE OF INVENTION: PROCESS FOR FUNCTIONAL EXPRESSION OF THE
PARA SODIUM CHANNEL
- (iii) NUMBER OF SEQUENCES: 7
- (iv) CORRESPONDENCE ADDRESS:
 - (A) ADDRESSEE: Jack L. Tribble
 - (B) STREET: P.O. Box 2000, 126 E. Lincoln Avenue
 - (C) CITY: Rahway
 - (D) STATE: New Jersey
 - (E) COUNTRY: USA
 - (F) ZIP: 07065-0907
- (v) COMPUTER READABLE FORM:
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.25
- (vi) CURRENT APPLICATION DATA:
 - (A) APPLICATION NUMBER:
 - (B) FILING DATE:
 - (C) CLASSIFICATION:
- (viii) ATTORNEY/AGENT INFORMATION:
 - (A) NAME: Tribble, Jack L.
 - (B) REGISTRATION NUMBER: 32,633
 - (C) REFERENCE/DOCKET NUMBER: 19338DA
- (ix) TELECOMMUNICATION INFORMATION:
 - (A) TELEPHONE: (908) 594-5321
 - (B) TELEFAX: (908) 594-4720

(2) INFORMATION FOR SEQ ID NO:1:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 33 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO:1:

GACTCTAGAC GTTGGCCGCA TAGACAATGA CAG

33

(2) INFORMATION FOR SEQ ID NO:2:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:2:

AAGAGCTCGA CGAAGGGATC G

21

(2) INFORMATION FOR SEQ ID NO:3:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 24 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:3:

TCTTCGATCC CTTTCGTCGAG CTCT

24

(2) INFORMATION FOR SEQ ID NO:4:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 21 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:4:

AAAGGATCCA AATATGATGA A

21

(2) INFORMATION FOR SEQ ID NO:5:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 25 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single

(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:5:

TTTGGATCCT TTTTCACACT CAATC 25

(2) INFORMATION FOR SEQ ID NO:6:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 32 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:6:

GACTCTAGAG CTAATACTCG CGTGCATCTT GG 32

(2) INFORMATION FOR SEQ ID NO:7:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 6513 base pairs
 - (B) TYPE: nucleic acid
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear

(ii) MOLECULE TYPE: cDNA

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:7:

| | |
|--|-----|
| TCTAGACGTT GGCCGCATAG ACAATGACAG AAGATTCCGA CTCGATATCT GAGGAAGAAC | 60 |
| GCAGTTTGTT CCGTCCCTTT ACCCGCGAAT CATTGGTGCA AATCGAACA CGCATTGCCG | 120 |
| CTGAACATGA AAAGCAGAAG GAGCTGGAAA GAAAGAGAGC CGAGGGAGAG GTGCCGCGAT | 180 |
| ATGGTCGCAA GAAAAACAA AAAGAAATCC GATATGATGA CGAGGACGAG GATGAAGGTC | 240 |
| CACAACCGGA TCCTACACTT GAACAGGGTG TGCCAATACC GTTTCGATTG CAGGGCAGCT | 300 |
| TCCCGCCGGA ATTGGCCTCC ACTCCTCTCG AGGATATCGA TCCCTACTAC AGCAATGTAC | 360 |
| TGACATTTCGT AGTTGTAAGC AAAGGAAAAG ATATTTTTCG CTTTTCTGCA TCAAAAGCAA | 420 |
| TGTGGATGCT CGATCCATTC AATCCGATAC GTCGTGTGGC CATTTACATT CTAGTGCATC | 480 |

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|------------|-------------|------------|-------------|------------|------------|------|
| CATTATTTTC | CCTATTCATC | ATCACCACAA | TTCTCGTCAA | CTGCATCCTG | ATGATAATGC | 540 |
| CGACAACGCC | CACGGTTGAG | TCCACTGAGG | TGATATTAC | CGGAATCTAC | ACATTTGAAT | 600 |
| CAGCTGTTAA | AGTGATGGCA | CGAGGTTTCA | TTTTATGCCC | GTTTACGTAT | CTTAGAGATG | 660 |
| CATGGAATTG | GCTGGACTTC | GTAGTAATAG | CTTTAGCTTA | TGTGACCATG | GGTATAGATT | 720 |
| TAGGTAATCT | AGCAGCCCTG | CGAACGTTTA | GGGTGCTGCG | AGCGCTTAAA | ACCGTAGCCA | 780 |
| TTGTGCCAGG | CTTGAAGACC | ATCGTCGGCG | CCGTCATCGA | ATCGGTGAAG | AATCTGCGCG | 840 |
| ATGTGATTAT | CCTGACCATG | TTCTCCCTGT | CGGTGTTTCGC | GTTGATGGGC | CTACAGATCT | 900 |
| ATATGGGCGT | GCTCACCGAG | AAGTGCATCA | AGAAGTTCCC | GCTGGACGGT | TCCTGGGGCA | 960 |
| ATCTGACCGA | CGAGAACTGG | GACTATCACA | ATCGCAATAG | CTCCAATTGG | TATTCCGAGG | 1020 |
| ACGAGGGCAT | CTCATTTCCG | TTATGCGGCA | ATATATCCGG | TGCGGGGCAA | TGCGACGACG | 1080 |
| ATTACGTGTG | CCTGCAGGGG | TTTGGTCCGA | ATCCGAATTA | TGGCTACACC | AGCTTCGATT | 1140 |
| CGTTCGGATG | GGCTTTCCTG | TCCGCCTTCC | GGCTGATGAC | ACAGGACTTC | TGGGAGGATC | 1200 |
| TGTACCAGCT | GGTGTTCGCG | GCCGCCGGAC | CATGGCACAT | GCTGTTCCTT | ATAGTCATCA | 1260 |
| TCTTCCTAGG | TTCATTCCTAT | CTTGTGAATT | TGATTTTGGC | CATTGTTGCC | ATGTCGTATG | 1320 |
| ACGAATTGCA | AAGGAAGGCC | GAAGAAGAAG | AGGCTGCCGA | AGAGGAGGCG | ATACGTGAAG | 1380 |
| CGGAAGAAGC | TGCCGCCGCC | AAAGCGGCCA | AGCTGGAGGA | GCGGGCCAAT | GCGCAGGCTC | 1440 |
| AGGCAGCAGC | GGATGCGGCT | GCCGCCGAAG | AGGCTGCACT | GCATCCGGAA | ATGGCCAAGA | 1500 |
| GTCCGACGTA | TTCTTGATC | AGCTATGAGC | TATTTGTTGG | CGGCGAGAAG | GGCAACGATG | 1560 |
| ACAACAACAA | AGAGAAGATG | TCCATTTCGA | GCGTCGAGGT | GGAGTCGGAG | TCGGTGAGCG | 1620 |
| TTATACAAAG | ACAACCAGCA | CCTACCACAG | CACACCAAGC | TACCAAAGTT | CGTAAAGTGA | 1680 |
| GCACGACATC | CTTATCCTTA | CCTGGTTCAC | CGTTTAACAT | ACGCAGGGGA | TCACGTAGTT | 1740 |
| CTCACAAGTA | CACGATACGG | AACGGACGTG | GCCGCTTTGG | TATACCCGGT | AGCGATCGTA | 1800 |
| AGCCATTGGT | ATTGTCAACA | TATCAGGATG | CCCAGCAGCA | CTTGCCCTAT | GCCGACGACT | 1860 |
| CGAATGCCGT | CACCCCAGTG | TCCGAAGAGA | ATGGGGCCAT | CATAGTGCCC | GTGTACTATG | 1920 |
| GCAATCTAGG | CTCCCGACAC | TCATCGTATA | CCTCGCATCA | GTCCCGAATA | TCGTATACCT | 1980 |
| CACATGGCGA | TCTACTCGGC | GGCATGGCCG | TCATGGGCGT | CAGCACAATG | ACCAAGGAGA | 2040 |
| GCAAATTGCG | CAACCGCAAC | ACACGCAATC | AATCAGTGGG | CGCCACCAAT | GGCGGCACCA | 2100 |
| CCTGTCTGGA | CACCAATCAC | AAGCTCGATC | ATCGCGACTA | CGAAATTGGC | CTGGAGTGCA | 2160 |

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|-------------|------------|------------|------------|-------------|-------------|------|
| CGGACGAAGC | TGGCAAGATT | AAACATCATG | ACAATCCTTT | TATCGAGCCC | GTCCAGACAC | 2220 |
| AAACGGTGGT | TGATATGAAA | GATGTGATGG | TCCTGAATGA | CATCATCGAA | CAGGCCGCTG | 2280 |
| GTCGGCACAG | TCGGGCAAGC | GATCGCGGTG | TCTCCGTTTA | CTATTTCCCA | ACAGAGGACG | 2340 |
| ATGACGAGGA | TGGGCCGACG | TTCAAAGACA | AGGCACTCGA | AGTGATCCTC | AAAGGCATCG | 2400 |
| ATGTGTTTTG | TGTGTGGGAC | TGTTGCTGGG | TTTGGTGAA | ATTTTCAGGAG | TGGGTATCGC | 2460 |
| TCATCGTCTT | CGATCCCTTC | GTCGAGCTCT | TCATCACGCT | GTGCATTGTG | GTCAACACGA | 2520 |
| TGTTTCATGGC | AATGGATCAC | CACGATATGA | ACAAGGAGAT | GGAACGCGTG | CTCAAGAGTG | 2580 |
| GCAACTATTT | CTTCACCGCC | ACCTTTGCCA | TCGAGGCCAC | CATGAAGCTA | ATGGCCATGA | 2640 |
| GCCCCAAGTA | CTATTTCCAG | GAGGGCTGGA | ACATCTTCGA | CTTCATTATC | GTGGCCCTAT | 2700 |
| CGCTATTGGA | ACTGGGACTC | GAGGGTGTCC | AGGGTCTGTC | CGTATTGCGT | TCCTTTTCGAT | 2760 |
| TGCTGCGTGT | ATTCAAACG | GCCAAGTCTT | GGCCACACT | TAATTTACTC | ATTTTCGATTA | 2820 |
| TGGGACGCAC | CATGGGCGCT | TTGGGTAATC | TGACATTTGT | ACTTTGCATT | ATCATCTTCA | 2880 |
| TCTTTGCGGT | GATGGGAATG | CAACTGTTTC | GAAAGAATTA | TCATGATCAC | AAGGACCGCT | 2940 |
| TTCCGGATGG | CGACCTGCCG | CGCTGGAAC | TCACCGACTT | TATGCACAGC | TTCATGATCG | 3000 |
| TGTTCCGGGT | GCTCTGCGGA | GAATGGATCG | AGTCCATGTG | GGACTGCATG | TACGTGGGCG | 3060 |
| ATGTCTCGTG | CATTCCCTTC | TTCTTGCCCA | CCGTTGTGTC | CGGCAATCTT | GTGGTACTTA | 3120 |
| ACCTTTTCTT | AGCCTTGCTT | TTGTCCAATT | TTGGCTCATC | TAGCTTATCA | GCGCCGACTG | 3180 |
| CCGATAACGA | TACGAATAAA | ATAGCCGAGG | CCTTCAATCG | AATTGGCCGA | TTTAAAAGTT | 3240 |
| GGGTAAAGCG | TAATATTGCT | GATTGTTTCA | AGTTAATACG | TAACAAATTG | ACAAATCAAA | 3300 |
| TAAGTGATCA | ACCATCAGGT | GAGAGGACCA | ACCAGATCAG | TTGGATTG | AGCGAAGAGC | 3360 |
| ATGGTGACAA | CGAACTGGAG | CTGGGCCACG | ACGAGATCCT | CGCCGACGGC | CTCATCAAGA | 3420 |
| AGGGGATCAA | GGAGCAGACG | CAACTGGAGG | TGGCCATCGG | GGATCGGATG | GAATTCACGA | 3480 |
| TACACGGCGA | CATGAAGAAC | AACAAGCCGA | AGAAATCCAA | ATATCTAAAT | AACGCAACGA | 3540 |
| TGATTGGCAA | CTCAATTAAC | CACCAAGACA | ATAGACTGGA | ACACGAGCTA | AACCATAGAG | 3600 |
| GTTTGTCCCTT | ACAGGACGAC | GACACTGCCA | GCATTAATC | ATATGGTAGC | CATAAGAATC | 3660 |
| GACCATTC | GGACGAGAGC | CACAAGGGCA | GCGCCGAGAC | GATGGAGGGC | GAGGAGAAGC | 3720 |
| GCGACGCCAG | CAAGGAGGAT | TTAGGTCTCG | ACGAGGAACT | GGACGAGGAG | GGCGAATGCG | 3780 |
| AGGAGGGCCC | GCTCGACGGT | GATATCATTA | TTCATGCACA | CGACGAGGAT | ATACTCGATG | 3840 |

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|------------|------------|-------------|-------------|------------|------------|------|
| AATATCCAGC | TGATTGCTGC | CCCGATTTCGT | ACTATAAGAA | ATTTCCGATC | TTAGCCGGTG | 3900 |
| ACGATGACTC | GCCGTTCTGG | CAAGGATGGG | GCAATTTACG | ACTGAAAAC | TTTCAATTAA | 3960 |
| TTGAAAATAA | ATATTTTGAA | ACAGCTGTTA | TCACTATGAT | TTTAATGAGT | AGCTTAGCTT | 4020 |
| TGGCATTAGA | AGATGTACAT | CTGCCACAAA | GACCCATACT | GCAGGATATT | TTATACTATA | 4080 |
| TGGACAGAAT | ATTTACGGTT | ATATTCTTCT | TGGAAATGTT | AATCAAGTGG | TTGGCGCTCG | 4140 |
| GCTTCAAAGT | GTACTTCACC | AACGCGTGGT | GTTGGCTCGA | TTTCGTGATT | GTCATGGTAT | 4200 |
| CGCTTATCAA | CTTCGTTGCT | TCACTTGTTG | GAGCTGGTGG | TATTCAAGCC | TTCAAGACTA | 4260 |
| TGCGAACGTT | AAGAGCACTG | AGACCACTAC | GTGCCATGTC | CCGTATGCAG | GGCATGAGGG | 4320 |
| TCGTCTGTAA | TGCGCTGGTA | CAAGCTATAC | CGTCCATCTT | CAATGTGCTA | TTGGTGTGTC | 4380 |
| TAATATTTTG | GCTAATTTTT | GCCATAATGG | GTGTACAGCT | TTTTGCTGGA | AAATATTTTA | 4440 |
| AGTGCGAGGA | CATGAATGGC | ACGAAGCTCA | GCCACGAGAT | CATACCAAAT | CGCAATGCCT | 4500 |
| GCGAGAGCGA | GAACACACG | TGGGTGAATT | CAGCAATGAA | TTTCGATCAT | GTAGGTAACG | 4560 |
| CGTATCTGTG | CCTTTTCCAA | GTGGCCACCT | TCAAAGGCTG | GATACAAATC | ATGAACGATG | 4620 |
| CTATCGATTG | ACGAGAGGTG | GACAAGCAAC | CAATTTCGTGA | AACGAACATC | TACATGTATT | 4680 |
| TATATTTTCG | ATTCTTCATC | ATATTTGGAT | CCTTTTTCAC | ACTCAATCTG | TTCATTGGTG | 4740 |
| TTATCATTGA | TAATTTTAAT | GAGCAAAAGA | AAAAAGCAGG | TGGATCATTA | GAAATGTTCA | 4800 |
| TGACAGAAGA | TCAGAAAAAG | TACTATAATG | CTATGAAAAA | GATGGGCTCT | AAAAAACCAT | 4860 |
| TAAAAGCCAT | TCCAAGACCA | AGGTGGCGAC | CACAAGCAAT | AGTCTTTGAA | ATAGTAACCG | 4920 |
| ATAAGAAATT | CGATATAATC | ATTATGTTAT | TCATTGGTCT | GAACATGTTC | ACCATGACCC | 4980 |
| TCGATCGTTA | CGATGCGTCG | GACACGTATA | ACGCGGTCCT | AGACTATCTC | AATGCGATAT | 5040 |
| TCGTAGTTAT | TTTCAGTTCC | GAATGTCTAT | TAAAAATATT | CGCTTTACGA | TATCACTATT | 5100 |
| TTATTGAGCC | ATGGAATTTA | TTTGATGTAG | TAGTTGTCAT | TTTATCCATC | TTAGGTCTTG | 5160 |
| TACTTAGCGA | TATTATCGAG | AAGTACTTCG | TGTCGCCGAC | CCTGCTCCGA | GTGGTGCGTG | 5220 |
| TGGCGAAAAG | GGGCCGTGTC | CTTCGACTGG | TGAAGGGAGC | CAAGGGCATT | CGGACACTGC | 5280 |
| TCTTCGCGTT | GGCCATGTCG | CTGCCGGCCC | TGTTCAACAT | CTGCCTGCTG | CTGTTCTCTG | 5340 |
| TCATGTTTAT | CTTTGCCATT | TTCGGCATGT | CGTTCCTTAT | GCACGTGAAG | GAGAAGAGCG | 5400 |
| GCATTAACGA | CGTCTACAAC | TTCAAGACCT | TTGGCCAGAG | CATGATCCTG | CTCTTTCAGA | 5460 |
| TGTTCGACGC | AGCCGGTTGG | GATGGTGTAC | TGGACGCCAT | TATCAATGAG | GAAGCATGCG | 5520 |

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|------------|------------|------------|-------------|------------|------------|------|
| ATCCACCCGA | CAGCGACAAA | GGCTATCCGG | GCAATTGTGG | TTCAGCGACC | GTTGGAATAA | 5580 |
| CGTTTCTCCT | CTCATACCTA | GTTATAAGCT | TTTTGATAGT | TATTAATATG | TACATTGCTG | 5640 |
| TCATTCTCGA | GAACATAGT | CAGGCCACCG | AGGACGTGCA | AGAGGGTCTA | ACCGACGACG | 5700 |
| ACTACGACAT | GTACTATGAG | ATCTGGCAGC | AATTCGATCC | GGAGGGCACC | CAGTACATAC | 5760 |
| GCTATGATCA | GCTGTCCGAA | TTCCTGGACG | TACTGGAGCC | CCCGCTGCAG | ATCCACAAAC | 5820 |
| CGAACAAGTA | CAAGATCATA | TCGATGGACA | TACCCATCTG | TCGCGGTGAC | CTCATGTACT | 5880 |
| GCGTCGACAT | CCTCGACGCC | CTTACGAAAG | ACTTCTTTGC | GCGGAAGGGC | AATCCGATAG | 5940 |
| AGGAGACGGG | TGAGATTGGT | GAGATAGCGG | CCCGCCCGGA | TACGGAGGGC | TACGAGCCCG | 6000 |
| TCTCATCAAC | GCTGTGGCGT | CAGCGTGAGG | AGTACTGCGC | CCGGCTAATC | CAGCACGCCT | 6060 |
| GGCGAAAGCA | CAAGGCGCGC | GGCGAGGGAG | GTGGGTCCCTT | TGAGCCGGAT | ACGGATCATG | 6120 |
| GCGATGGCGG | TGATCCGGAT | GCCGGGGACC | CGGCGCCCGA | TGAAGCAACG | GACGGCGATG | 6180 |
| CGCCCGCTGG | TGGAGATGGT | AGTGTTAACG | GTACTGCAGA | AGGAGCTGCC | GATGCCGATG | 6240 |
| AGAGTAATGT | AAATAGTCCG | GGTGAGGATG | CAGCGGCGGC | GGCAGCAGCA | GCAGCAGCAG | 6300 |
| CGGCGGCGGC | GGGCACGACG | ACGGCGGGAA | GTCCCGGAGC | GGGTAGCGCC | GGGCGACAGA | 6360 |
| CCGCCGTTCT | CGTGGAGAGC | GACGGGTTCG | TGACGAAGAA | CGGCCACAAG | GTGGTCATCC | 6420 |
| ACTCGCGATC | GCCGAGCATC | ACGTCGCGCA | CGGCGGATGT | CTGAGCCAGG | CCTCGCCCCC | 6480 |
| CCCTCCAAGA | TGCACGCGAG | TATTAGCTCT | AGA | | | 6513 |